



ELSEVIER

Resources, Conservation and Recycling 31 (2000) 105–106

**resources,  
conservation  
and recycling**

[www.elsevier.com/locate/resconrec](http://www.elsevier.com/locate/resconrec)

## Book review

***Industrial Transformation Science Plan, IHDP Report No. 12, Edited by Pier Vellinga and Nadia Herb, International Human Dimensions Programme on Global Environmental Change, Bonn, Germany, December 1999, 94 pp., softcover*<sup>1</sup>**

The International Human Dimensions Programme on Industrial Transformation (IHDP-IT) aims to try to understand the societal mechanisms and human driving forces that could facilitate a transformation of the industrial system towards sustainability. In physical terms industrial transformation will require the decoupling of consumption and production, commonly denoted as industrial activities, from their environmental impacts. IHDP-IT seeks to integrate and stimulate co-operation among international and interdisciplinary scientists.

The industrial Transformation Science Plan (published in December 1999) tries to identify priority research questions in the area of industrial transformation. Industrial transformation is defined by the authors of this report as the relationship between societal, technological, and environmental change, and focuses on systems and system changes that are relevant in view of the global environment (such as the energy system, the food system, and the urban system). Industrial Transformation relates producer and consumer perspectives, including the incentives and institutions that help in shaping these perspectives; and the research is international in scope. The Science Plan focuses on five research areas, i.e. energy and material flows, food production and consumption, cities and urban development, information and communication, and governance and transformation.

The Science Plan is a timely report that lays out basic research questions in various critical areas of prime interest to the readers of *Resources, Conservation and Recycling*. It is produced at a time that globalization of the economy and of environmental challenges need an international approach, as well as a systems perspective from a multi-disciplinary background for research on future sustainable resource use.

<sup>1</sup> A copy of the report can be obtained from Anna J. Wieczorek, Institute for Environmental Studies, Vrije Universiteit, De Boelelaan 1115, 1081 HV Amsterdam, The Netherlands. [anna.j.wieczorek@ivm.vu.nl](mailto:anna.j.wieczorek@ivm.vu.nl). It can also be found online at: <http://www.uni-bonn.de/ihdp/ITSciencePlan/index.htm>

The five research topics selected in the Science Plan are important and timely. Research into energy and material flows has led to a growing understanding of the synergies between both. Climate change and trade globalization make material flow analyses an essential tool to track the dynamics of the economic and environmental system. In the cycle of food supply the debate on genetically modified organisms (GMOs) has unfortunately not been discussed in much detail in the Science Plan, but gives another dimension to the importance of this research theme, and stresses the need for multi-disciplinary research. While, the theme of urbanization of our environment will always need research, even more so from an environmental respect, because more and more people in developing countries will migrate towards (mega-) cities with huge consequences for resource allocation and environmental pollution. The theme on information and communication is also very timely, and we are just starting to understand the consequences for resource use in society. The flawed analysis of energy use for internet services by groups related to the power industry in the current debate on resource use of the 'new economy' in the United States stresses the need for sound scientific analysis in a multi-disciplinary fashion to understand all the effects of the information society. The debates around the World Trade Organisation (WTO), as well as the climate debate stress the role of governance in global environmental change, and analyses of the resource implications of the trend towards increased market-economic approaches need in-depth research by economists and environmental scientists.

A Science Plan is by necessity brief, but it outlines the main research areas, and will likely help researchers around the world to improve the research and increase international collaboration. The challenge of a Science Plan like this will be, however, the opportunity to implement the recommendations and research directions. Only the future will show if the authors and all people involved in this effort will succeed in increasing multi-disciplinary research in the area of industrial transformation. This will depend also on the geographic and disciplinary participation that can be achieved. Despite the many regional workshops used to produce this document and increase participation many of the research questions and projects mentioned in the report are still focused on industrialized countries. The challenge will be to increase high-quality participation from developing countries, newly industrialized countries and countries with economies in transition.

Researchers in the field of *Resources, Conservation and Recycling* should definitely read the Science Plan and actively search ways to increase collaboration in these important research fields. As editor of *Resources, Conservation and Recycling*, I look forward to the opportunity to publish high quality results from multi-disciplinary research on resource use and industrial transformation.

3 July 2000

Ernst Worrell  
Editor, *Resources, Conservation and Recycling*,  
Lawrence Berkeley National Laboratory,  
1 Cyclotron Road,  
Berkeley CA94720,  
USA